

(11) EP 1 106 475 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 10.10.2001 Bulletin 2001/41

(51) Int Cl.7: **B62D 5/04**

- (43) Date of publication A2: 13.06.2001 Bulletin 2001/24
- (21) Application number: 00125589.2
- (22) Date of filing: 22.11.2000
- (84) Designated Contracting States:

 AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU

 MC NL PT SE TR

 Designated Extension States:

 AL LT LV MK RO SI
- (30) Priority: 30.11.1999 JP 33953399
- (71) Applicant: KOYO SEIKO CO., LTD. Osaka 542-0081 (JP)
- (72) Inventors:
 - Kobayashi, Masanori, c/o Koyo Seiko Co., Ltd. Osaka 542-0081 (JP)
 - Ogushi, Kouji, c/o Koyo Seiko Co., Ltd. Osaka 542-0081 (JP)

- Deyama, Takefumi, c/o Koyo Seiko Co., Ltd. Osaka 542-0081 (JP)
- Kitami, Etsuro, c/o Koyo Seiko Co., Ltd.
 Osaka 542-0081 (JP)
- Murakami, Hiroaki, c/o Koyo Seiko Co., Ltd.
 Osaka 542-0081 (JP)
- Tsutsui, Teruo, c/o Koyo Seiko Co., Ltd. Osaka 542-0081 (JP)
- Tsutsul, Takeshi, c/o Koyo Seiko Co., Ltd. Osaka 542-0081 (JP)
- (74) Representative: Grünecker, Kinkeldey, Stockmair & Schwanhäusser Anwaltssozietät Maximilianstrasse 58 80538 München (DE)

(54) Power steering apparatus

(57) When a steering wheel is relatively quickly turned at the time of parking, before a first stopper mechanism located between an input shaft and an output shaft is operated, an elastic member 47 attached to a movement end of a rack shaft 13 comes into contact with a rack stopper 39 of a rack housing 14, thereby absorbing the impact at the time of steering at parking. That is, the strike speed when contact portions of the first stopper mechanism are brought into contact with each other, is slowed down. Accordingly, the uncomfortable noise due to the strike sound is not given to the driver.

